



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/225,198	01/05/1999	ADAM J. CHEYER	SRI1P016	2756

25696 7590 07/17/2002

OPPENHEIMER WOLFF & DONNELLY
P. O. BOX 10356
PALO ALTO, CA 94303

EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT PAPER NUMBER

2151

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/225,198

Applicant(s)

CHEYER ET AL.

Examiner

Lewis A. Bullock, Jr.

Art Unit

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-89 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-89 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant claims the recursively applying the last step of claim 1, however the Examiner cannot determine which step applicant is referring to.

Applicant is either referring to the dynamically interpreting step and its substep or the dispatching step of the dynamically interpreting step. Clarification is requested.

2. Claim 3 recites the limitation "from the specific agent to the facilitator agent" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim. There is no mention of the facilitator agent anywhere in the parent claims. In review of the specification the examiner finds the facilitator agent performs the steps of claim 1, however, claim 1 does not detail the facilitator agent as performing the steps. The examiner request Applicant to amend claim 1 to detail that the facilitator agent performs the functionality.

3. Claims 84 and 85 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 84 and 85 recite the planning and execution components, however neither component has antecedent basis in the parent claim 71. Correction is requested.

4. Claims 87 and 88 recite the limitation "A data wave carrier as recited in claim 85" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claims 87 and 88 should be dependent on claim 86 not claim 85 and are further examined as such.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 5-11, 15-28, 48-89 are rejected under 35 U.S.C. 102(a) as being anticipated by "Building Distributed Software Systems with the Open Agent Architecture" by MARTIN.

As to claim 1, MARTIN teaches a computer-implemented method for communication and cooperative task completion among a plurality of distributed agents (application agent / meta agent / user interface agent), comprising the acts of: registering a description of each client agent's functional capabilities (capabilities specifications), using a platform independent inter-agent language (ICL); receiving a request for service as a base goal (goals created by requesters of service) in the inter-agent language, in the form of an arbitrarily complex goal expression; and dynamically interpreting the goal expression (goals) (via facilitator) comprising: generating one or

more sub-goals using the inter-agent language; and dispatching each of the sub-goals to a selected client agent (service providers) for performance, based on a match between the sub-goal being dispatched and the registered functional capabilities of the selected client agent (pg. 7, Mechanisms of Cooperation; pg. 12-14, Requesting Services; Refining Service Requests, and Facilitation).

As to claim 2, MARTIN teaches receiving a new request (subgoal) for service as a base goal from at least one of the selected client agents in response to the sub-goal and recursively applying the dynamically interpreting (pg. 13, Refining Service Requests).

As to claims 5-10, MARTIN teaches providing an agent registry data structure that can comprise of symbolic names, data declarations, trigger declarations, and task and process characteristics (pg. 13-14, Facilitation; pg. 7, "In processing a request...it can use ICL to request services of other agents, set triggers, and read or write shared data on the facilitator...").

As to claim 11, MARTIN teaches establishing communication between distributed agents (pg. 6, The facilitator is a specialized server agent that is responsible for coordinating agent communications and cooperative problem-solving.").

As to claims 15-25, MARTIN teaches the base goal requires setting a trigger having conditional functionality and consequential functionality which can be stored on the facilitator agent and/or the service providing agent (pgs. 16-17, Autonomous Monitoring Using Triggers).

As to claims 26-28, MARTIN teaches the base goal is a compound goal having sub-goals separated by operators, i.e. conjunction operator, disjunction operator, conditional operator, and a parallel operator (pg. 12-13, Compound goals).

As to claim 48, MARTIN teaches an Inter-agent Communication Language (ICL) providing a basis for facilitated cooperative task completion within a distributed computing environment having a facilitator agent (facilitator) and a plurality of electronic agents (service providing agents / service requesting agents), the ICL enabling agents to perform queries of other agents, exchange information with other agents, set triggers within other agents (pgs. 4-7, Overview of OAA System Structure, Mechanisms of Cooperation; pg. 8, "OAA agents employ ICL to perform queries, execute actions, exchange information, set triggers, and manipulate data in the agent community."), an ICL syntax supporting compound goal expressions such that goals within a single request provided according to the ICL syntax may be coupled by a conjunctive operator, a disjunctive operator, a conditional execution operator, and a parallel operator that indicates that goals are to be performed by different agents (pg. 12, Compound goals).

As to claim 49 and 50, MARTIN teaches the ICL is platform and language independent (pg. 8, "OAA's Inter-agent Communication Language (ICL) is the interface, communication, and task coordination language shared by all agents, regardless of what platform they run on or what computer language they are programmed in.").

As to claims 51-54, MARTIN teaches the ICL supports task completion constraints within goal expressions (pg. 9, "A number of important declarations...we consider each of these elements.").

As to claims 55-60, MARTIN teaches each electronic agent defines and publishes a set of capability declarations or solvables that describe services and an interface to the electronic agent (pg. 9, "A number of important declarations...we consider each of these elements.").

As to claims 61 and 62, reference is made to an agent that performs the method of claim 1 above and is therefore met by the rejection of claim 1 above. However, claim 61 further details an agent register and the construction of a goal satisfaction plan. MARTIN teaches an agent register (knowledge base) (pg. 13-14, Facilitation); and the construction of a goal satisfaction plan (pg. 13, "When a facilitator receives a compound goal, its job is to construct a goal satisfaction plan and oversee its satisfaction in the most appropriate, efficient manner that is consistent with the specified advice.").

As to claim 63, refer to claim 5 for rejection.

As to claim 64-69, refer to claims 15-25 for rejection.

As to claim 70, MARTIN teaches the agent registry (knowledge base) is a database accessible to all electronic agents (via the facilitator) (pg. 13-14, Facilitation).

As to claim 71, reference is made to an architecture that encompasses the agent of claim 61 above, and is therefore met by the rejection of claim 61 above. However claim 71, further details the facilitator agent in bi-directional communication with the electronic agents. MARTIN teaches the facilitator agent in bi-directional communication with the electronic agents (fig 1).

As to claim 72, refer to claim 48 for rejection.

As to claims 73 and 74, refer to claims 49 and 50 for rejection.

As to claims 75-78, refer to claims 51-54 for rejection.

As to claims 79-83, refer to claims 54-60 for rejection.

As to claims 84 and 85, MARTIN teaches the facilitating engine is distributed across at least two processes (pg. 6, "Larger systems can be assembled from multiple facilitator/client groups...").

As to claim 86, MARTIN teaches a data wave carrier (system) providing a transport mechanism (layer of conversational protocol / communication functions) for information communication in a distributed computing environment having at least one facilitator agent (facilitator) and at least one client agent (application agent / user interface agent), the carrier comprising a signal representation of an inter-agent language description of a client agent's functional capabilities (registering by the service provider agents) (pg. 6-9).

As to claim 87, MARTIN teaches a signal representation of a request for service in the inter-agent language from a first agent to a second agent (request for service from an service requesting agent to the facilitator) (pg. 12, Requesting Services).

As to claim 88, MARTIN teaches a signal representation of a goal dispatched to an agent for performance from a facilitator agent (pg. 13-14, Facilitation).

As to claim 89, MARTIN teaches a signal representation of a response to the dispatched goal including results and/or a status report from the agent for performance to the facilitator agent (pg. 13-14, Facilitation).

7. Claims 1, 2, 5-11, and 15-25 are rejected under 35 U.S.C. 102(b) as being anticipated by "Development Tools for the Open Agent Architecture" by MARTIN.

As to claim 1, MARTIN teaches a computer-implemented method for communication and cooperative task completion among a plurality of distributed agents (sub-agents / agents), comprising the acts of: registering a description of each client agent's functional capabilities, using a platform independent inter-agent language (pg. 5, Each facilitator records the published capabilities of their subagents..."); receiving a request as a base goal in the inter-agent language (ICL form), in the form of an arbitrarily complex goal expression; and dynamically interpreting the goal expression comprising: generating one or more sub-goals using the inter-agent language; and dispatching each of the sub-goals to a selected client agent for performance ("pg. 5, "...and when requests arrive (expressed in the Inter-agent Communication Language, described below), the facilitator is responsible for breaking them down and for distributing sub-requests to the appropriate agents; "For example, every agent can...and request solutions for a set of goals,...").

As to claim 2, MARTIN teaches receiving a new request for service as a base goal from at least one of the selected client agents in response to the sub-goal and recursively applying the dynamically interpreting (pg. 5, "An agent satisfying a request may require supporting information, and the OAA provides numerous means of requesting data from other agents or from the user.").

As to claims 5-10, MARTIN teaches providing an agent registry data structure that can comprise of symbolic names, data declarations, trigger declarations, and task and process characteristics (pg. 5, "For example, every agent can install local or remote triggers on data..").

As to claim 11, MARTIN teaches establishing communication between distributed agents (pg. 5, "...the facilitator is responsible for breaking them down and for distributing sub-requests to the appropriate agent..").

As to claims 15-25, MARTIN teaches the base goal requires setting a trigger having conditional functionality and consequential functionality which can be stored on the facilitator agent and/or the service providing agent (pg. 5, "For example, every agent can install local or remote triggers on data..").

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 29-34, and 38-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Building Distributed Software Systems with the Open Agent Architecture" by MARTIN.

As to claim 3, MARTIN teaches the act of registering and transmitting the new agent profile from the specific agent to the facilitator agent (pg. 7, "When invoked, a client agent makes a connection to a facilitator...an agent informs its parent facilitator of the services it is capable of providing."). It would be obvious that an agent that is initially created is instantiated in memory before it is registered.

As to claim 29, MARTIN teaches a method to facilitate cooperative task completion within a distributed computing environment supporting an Inter-agent Communication Language among a plurality of electronic agents (fig 1) comprising: providing an agent registry (knowledge base) as disclosed (pg. 13-14, Facilitation); interpreting a service request in order to determine a base goal (compound goal) comprising: determining any task completion advice provided by the base goal, and determining any task completion constraints provided by the base goal (pg. 14, "It may also use strategies or advice specified by the requester.."); constructing a base goal satisfaction plan (pg. 13, "When a facilitator receives a compound goal, its job is to construct a goal satisfaction plan and oversee its satisfaction in the most appropriate, efficient manner that is consistent with the specified advice.") comprising: determining whether the requested service is available, determining sub-goals required in completing the base goal (delegation), selecting suitable service-providing electronic

agents for performing the sub-goals, and ordering a delegation of sub-goal requests to complete the requested service; and implementing the base goal satisfaction plan (pg. 13-14, Facilitation). However, MARTIN does not explicitly mention that the method is operable in a computer program product. It would be obvious to one skilled in the art to generate program code that would entail the method of Martin and thereby obvious that the method can be entailed in a computer program product.

As to claims 30 and 31, MARTIN teaches registering a specific agent (service provider agents) into the agent registry comprising: establishing a bi-directional communications link between the specific agent and a facilitator agent (facilitator) controlling the agent registry; providing a new agent profile to the facilitator agent; and registering the specific agent with the profile thereby making the capabilities available to the facilitator agent (pgs. 9-10, Providing Services; pg. 7, Mechanisms of Cooperation).

As to claim 32, refer to claim 3 for rejection.

As to claim 33, refer to claim 5 for rejection.

As to claim 34, refer to claim 11 for rejection.

As to claims 38-44, refer to claims 15-25 for rejection.

As to claims 45-47, refer to claims 26-28 for rejection.

10. Claims 4, 12-14 and 35-37 is rejected under 35 U.S.C. 103(a) as being unpatentable over "Building Distributed Software Systems with the Open Agent Architecture" by MARTIN1 in view of "Information Brokering in an Agent Architecture" by MARTIN2.

As to claim 4, MARTIN1 substantially discloses the invention above. However, MARTIN1 does not explicitly mention the cited limitation. MARTIN2 teaches deactivating a client agent no longer available to provide services by deleting the registration (pg. 9, Source agents that need to go offline...so that it can unregister the source and retract its schema mapping rules."). Therefore it would be obvious to combine the teachings of MARTIN1 with the teachings of MARTIN2 in order to provide transparent access to a plurality of independent agents (abstract).

As to claims 12-14, MARTIN1 substantially discloses the invention above. However, MARTIN1 does not explicitly mention the cited limitation. MARTIN2 teaches receiving a request for service in a second language (source shema); selecting a registered agent capable of converting the second language into the inter-agent language (broker schema); and forwarding the request for service in a second language to the registered agent for conversion to be performed and the results returned (pg. 12-13, Queries Expressed in a Source Schema). Refer to claim 4 for the motivation to combine.

As to claims 35-37, refer to claims 12-14 for rejection.

11. Claims 3, 29-34, 38-47, 61-71, and 84-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Developing Tools for the Open Agent Architecture" by MARTIN.

As to claim 3, MARTIN teaches the act of registering and transmitting the new agent profile from the specific agent to the facilitator agent (pg. 5, "Every agent participating in an OAA-based system defines and publishes a set of capabilities specifications, expressed in the ICL, describing the services that it provides."). It would be obvious that an agent that is initially created is instantiated in memory before it is registered.

As to claim 29, MARTIN teaches a method to facilitate cooperative task completion within a distributed computing environment supporting an Inter-agent Communication Language among a plurality of electronic agents (sub-agents / agents) comprising: providing an agent registry as disclosed (facilitator storage of published sub-agents capabilities); interpreting a service request in order to determine a base goal (via facilitator) constructing a base goal satisfaction plan comprising: determining whether the requested service is available, determining sub-goals required in completing the base goal (determine solutions for a set of goals) selecting suitable service-providing electronic agents for performing the sub-goals, and ordering a

delegation of sub-goal requests to complete the requested service; and implementing the base goal satisfaction plan (pg. 5, "The facilitator is responsible for breaking them down and for distributing sub-requests to the appropriate agents."). However, MARTIN does not explicitly mention that the method is operable in a computer program product or the sending of advice or constraints. It would be obvious that since an agent can request solutions for a goal to be satisfied under a variety of different control strategies (pg. 5) that the control strategies are the advice and/or constraints. It would also be obvious to one skilled in the art to generate program code that would entail the method of Martin and thereby obvious that the method can be entailed in a computer program product.

As to claims 30 and 31, MARTIN teaches registering a specific agent (agent) into the agent registry (list of agents capabilities) comprising: establishing a bi-directional communications link between the specific agent and a facilitator agent controlling the agent registry; providing a new agent profile to the facilitator agent; and registering the specific agent with the profile thereby making the capabilities available to the facilitator agent (pg. 5, "Each facilitator records the published capabilities of their subagents..."; "Every agent participating in an OAA-based system...describing the services that it provides.").

As to claim 32, refer to claim 3 for rejection.

As to claim 33, refer to claim 5 for rejection.

As to claim 34, refer to claim 11 for rejection.

As to claims 38-44, refer to claims 15-25 for rejection.

As to claims 45-47, refer to claims 26-28 for rejection.

As to claim 61 and 62, reference is made to an agent that performs the method of claim 1 above and is therefore met by the rejection of claim 1 above. However, claim 61 further details an agent register and the construction of a goal satisfaction plan. MARTIN teaches every agent participating in an OAA-based system defines and publishes a set of capabilities describing the services that it provides and that the facilitator records these published capabilities (pg. 5). Therefore, there is an agent register of the capabilities of each agent. MARTIN also teaches an agent can request solutions for a set of goals to be satisfied under a variety of different control strategies. It would be obvious that since solutions are determined based on the goals and control strategies that a goal satisfaction plan is created.

As to claim 63, refer to claim 5 for rejection.

As to claim 64-69, refer to claims 15-25 for rejection.

As to claim 70, MARTIN teaches the agent registry (agent library / list of agent capabilities) is a database accessible to all electronic agents (pg. 5, A collection of agents satisfies requests from users, or other agents...one or more facilitators.”; “An agent satisfying a request may require supporting information...requesting data from other agents or from the user.”).

As to claim 71, reference is made to an architecture that encompasses the agent of claim 61 above, and is therefore met by the rejection of claim 61 above. However claim 71, further details the facilitator agent in bi-directional communication with the electronic agents. MARTIN teaches the facilitator can distribute request to the agents and the agents can request information via the facilitator (pg. 5), therefore it would be obvious that the facilitator and agents are in bi-directional communication.

As to claims 84 and 85, MARTIN teaches the facilitating engine is distributed across at least two processes (pg. 5, “Facilitators can, in turn, be connected as clients of other facilitators.”).

As to claim 86, MARTIN teaches system for information communication in a distributed computing environment having at least one facilitator agent (facilitator) and at least one client agent (sub-agent / agents), the carrier comprising a signal representation of an inter-agent language description (ICL registration of capabilities) of

a client agent's functional capabilities (pg. 5, "Each facilitator records the published capabilities of their subagents.."). It would be obvious that the system has a data wave carrier and a transport mechanism for network communication.

As to claim 87, MARTIN teaches a signal representation of a request for service in the inter-agent language from a first agent (client agent sending a query) to a second agent (facilitator) (pg. 5).

As to claim 88, MARTIN teaches a signal representation of a goal dispatched to an agent for performance from a facilitator agent (every agent can request solutions for a set of goals / facilitator is responsible for breaking them down and for distributing sub-requests to the appropriate agent) (pg. 5).

As to claim 89, It is well known in the art to one skilled in the art that an agent can send back a response after processing the request.

12. Claims 4, 12-14, 26-28, 35-37, 48-60, 72-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Development Tools for the Open Agent Architecture" by MARTIN1 in view of "Information Brokering in an Agent Architecture" by MARTIN2.

As to claim 4, MARTIN1 substantially discloses the invention above. However, MARTIN1 does not explicitly mention the cited limitation. MARTIN2 teaches deactivating a client agent no longer available to provide services by deleting the

registration (pg. 9, Source agents that need to go offline...so that it can unregister the source and retract its schema mapping rules."). Therefore it would be obvious to combine the teachings of MARTIN1 with the teachings of MARTIN2 in order to provide transparent access to a plurality of independent agents (abstract).

As to claims 12-14, MARTIN1 substantially discloses the invention above. However, MARTIN1 does not explicitly mention the cited limitation. MARTIN2 teaches receiving a request for service in a second language (source schema); selecting a registered agent capable of converting the second language into the inter-agent language (broker schema); and forwarding the request for service in a second language to the registered agent for conversion to be performed and the results returned (pg. 12-13, Queries Expressed in a Source Schema). Refer to claim 4 for the motivation to combine.

As to claims 26-28, MARTIN1 substantially discloses the invention above. However, MARTIN1 does not explicitly mention the cited limitation. MARTIN2 teaches the base goal is a compound goal having sub-goals (pg. 8, "Queries submitted to the Broker are expression...and backtracking in expressing and processing queries."). It would be obvious that since the base goal (query) is broken down and distributed to as sub-requests to the appropriate agents or solutions are requested for a set of goals as disclosed in MARTIN1 that the base goal as a compound goal is broken down based on

operators disclosing where it can be broken down. Refer to claim 4 for the motivation to combine.

As to claims 35-37, refer to claims 12-14 for rejection.

As to claim 48, MARTIN1 teaches an Inter-agent Communication Language (ICL) providing a basis for facilitated cooperative task completion within a distributed computing environment having a facilitator agent (facilitator) and a plurality of electronic agents (sub-agents / agents), the ICL enabling agents to perform queries of other agents, exchange information with other agents, set triggers within other agents (pg. 5, Agents share a common communication language...and may run on any network linked platform."). However, MARTIN1 does not teach the ICL supporting compound goal expressions. MARTIN2 teaches the query is a base goal stored in as a compound goal having sub-goals (pg. 8, "Queries submitted to the Broker are expression...and backtracking in expressing and processing queries."). It would be obvious that since the base goal (query) is broken down and distributed to as sub-requests to the appropriate agents or solutions are requested for a set of goals as disclosed in MARTIN1 that the base goal as a compound goal is broken down based on operators disclosing where it can be broken down. Refer to claim 4 for the motivation to combine.

As to claim 49 and 50, MARTIN1 teaches the ICL is platform and language independent (pg. 5, "The OAA's Inter-agent Communication Language...they are programmed in.").

As to claims 51-54, MARTIN1 teaches the ICL supports task completion constraints (triggers) within goal expressions (pg. 5).

As to claims 54-60, MARTIN1 teaches each electronic agent defines and publishes a set of capability declarations or solvables that describe services and an interface to the electronic agent (pg. 5, "Every agent participating in an OAA-based system defines and publishes...we refer to these capabilities specifications as solvables.").

As to claim 72, refer to claim 48 for rejection.

As to claims 73 and 74, refer to claims 49 and 50 for rejection.

As to claims 75-78, refer to claims 51-54 for rejection.

As to claims 79-83, refer to claims 54-60 for rejection.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (703) 305-0439. The examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alvin E. Oberley can be reached on (703) 305-9716. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0286.

July 11, 2002


ST. JOHN COURTENAY IN
PRIMARY EXAMINER